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10 We claim:

- 1. A cardio myopeptidin, which is a polypeptide isolated from hearts of healthy non-human mammals, comprising  $75\%\sim90\%$  of peptide,  $6\%\sim15\%$  of free amino acid, less than 2% of ribonucleic acid, less than 7.5% of deoxyribonucleic acid, and molecular weight is less than 10000 Da.
- 2. The cardio myopeptidin of claim 1 wherein said non-human mammals comprises pigs, cattle, sheep, rabbits or horses; preferably the infant mammals, and more preferably infant pig.
- 3. The cardio myopeptidin of claim 1 wherein average molecular weight is in the range from 1000 to 10000 Da, preferably from 2000 to 8000Da, and more preferably from 2000 to 5000Da.
- 4. The cardio myopeptidin of any one of claim 1 to 3 wherein the biological activity of cardio myopeptidin is stable at pH from 3 to 8, the cardio myopeptidin is sensitive to protease K, the biological activity will not change at the temperature of 85°C for 10 minutes, and is stable under frozen or lyophilized condition.
- 5. The cardio myopeptidin of any one of claim 1 to 3 wherein isoelectrofocusing electrophoresis of said cardio myopeptidin displays 2~6 stained bands, preferably two bands, among which, the band whose pI is 10.92 is the one with deeper color.
- 6. The cardio myopeptidin of any one of claim 1 to 3 wherein said cardio myopeptidin has a stable maximum absorption peak at 190~210 nm wavelength in UV spectrum, preferably the maximum ultraviolet absorption peak at 200±2 nm wavelength.
- 7. The cardio myopeptidin of any one of claim 1 to 3 wherein the activity of said cardio myopeptidin is 2.2.
- 8. The cardio myopeptidin of any one of claim 1 to 3 wherein said cardio myopeptidin further comprises excipient, and the content by weight is:

cardio myopeptidin: 15~20

Excipient: 100~375,

preferably the content is 18~20: 200~375.

and the excipient is mannitol, trehalose, lactose or sucrose or other adjuvants for lyophilization; preferably mannitol.

- 9. The cardio myopeptidin of any one of claim 1 to 3 wherein said cardio myopeptidin further comprises activated carbon with the content from 0.05% to 0.1%.
- 10. The cardio myopeptidin of any one of claim 1 to 3 wherein said cardio myopeptidin show five peaks on FPLC analysis spectrum, and the sum of relative area is 90%~95%.
  - 11. A method for the preparation of cardio myopeptidin in claim 1 comprising the step of:
  - (a) cleaning and cutting the hearts of hearts of healthy non-human mammals;
- (b) homogenizing by adding sterile distilled water to the myocardium of healthy non-human mammal which is cleaned and cut;
  - (c) freezing and thawing cycles the homogenate by alternately for 3 or 4 times;
- (d) filtering by the plate-and-frame filter to get a coarse filtrate and removing the residue after the homogenate is heated to 65~95°C;
  - (e) ultra-filtering the coarse filtrate with a hollow-fiber column to get a fine filtrate;
- (d) ultra-filtering the fine filtrate by ultrafiltration membrane to intercept the cardio myopeptidin solution with the molecular weight less than 10000 Da;
  - (e) concentrating the solution by reverse osmosis to get a concentrated cardio myopeptidin solution.

- (f)testing the quality, filtrating aseptically, filling and lyophilizing.
- 12. The method of claim 11 wherein amount of sterile distilled water added is from 0.5 to 4 times of that of the myocardium of mammals, and the rotation speed of homogenization is in the range from 1000 to 5000 rpm/min.
- 13. The method of claim 11 wherein said freezing is performed at a temperature of less than -5°C for 24~72 hours, preferably at -20°C~-30°C for 36~48 hours; heating is in the way of water bath heating or direct heating at a temperature of 70~90°C for not more than 2 hours, and preferably water bath heating at a temperature of 75°C~80°C for 1 hour.
- 14. The method of claim 11 wherein said the plate-and- frame filter comprise medium-speed filter paper having pores less than 10µ, preferably the pores less than or equal to 5µ; fine filtrate with molecular weight less than 12k Da is obtained through a hollow fiber column, and final filtrate with molecular weigh less than 10k Da is obtained by intercepting part of solution through ultrafiltration membrane.
- 15. The method of claim 11 wherein the process of lyophilization comprises the step of: the shelf in the drying chamber is cooled down to the temperature of -15°C~-20°C in 5~40 minutes, preferably to -18°C~-20°C in 20~30 minutes, followed the cardio myopeptidin is frozen to the temperature of -25~-35 °C within 20~40 minutes and maintaining at this temperature for 1~3 hours, preferably to -30~-35°C within 25~35 minutes; then the condenser is chilled to the temperature of -40~-50°C; at that time the pressure is reduced till the vacuum degree reaches 90~100 Kpa, the drying chamber is connected with condenser, and the refrigeration is stopped; after that, the temperature of drying chamber is raised to 5~15°C at the rate of 2~5°C/min and maintained at this temperature for 3~6 hours when vacuum degree of the drying chamber gets to 10~15 Pa, preferably the temperature is ascended to 8~12°C at the rate of 3~4°C/min with 4~5h heat preservation; the temperature is elevated continuously to 15~25°C at the rate of 8~16°C/min and kept for 3~8 hours, preferably the temperature is raised to 18~22°C at the rate of 10~12°C/min for 4~6 hours; then the temperature is further increased continuously to 30~35°C at the rate of 7~15°C/min and maintained for 1~4 hours, preferably 33~35°C at the rate of 9~12°C/min for 1.5~2 hours; furthermore the temperature is raised continuously to 50~60°C at the rate of 4~8°C/min for lasting 1~3 hours, preferably to 54~58°C at the rate of 5~7°C/min for 1.5~2 hours; then come to the cooling stage, in which the temperature is cooled down to 40-50°C within 10~30 minutes and stood such temperature for 8-15 hours, preferably cooled down to 45~48°C in 15~20 minutes and 9~12h preservation at such temperature to attain lyophilized production of cardio myopeptidin with qualified appearance.
- 16. The use of cardio myopeptidin of claim 1 for the manufacture of a medicament for the treatment of cardiovascular disease.
- 17. the use of cardio myopeptidin for the manufacture of a medicament for the treatment of myocardial ischemia-reperfusion injury.

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